

To: The Board of Managers
Chevy Chase Village, MD

From: Peter Kilborn, Board of Managers

Date: August 27, 2010

Subject: Speed Humps

In the face of residents' recurring requests for speed humps along Village streets, the board has shown interest in devising objective criteria for defining a neighborhood's need for the humps. The board has asked the police department to examine the issue, and Chief Gordon has responded with a thorough and helpful analysis and possible criteria. We need research in addition to the chief's, however, for the board to define and codify a Village traffic control policy. With that in mind, I have examined the practices of scores of communities, big and small, suburban and urban, whose practices are treated on community Web sites. In the attachment to this letter, you will find a representative sampling of the communities' practices.

Some elements of these practices depart sharply from the Village police department's views and recommendations. One that could be problematical is the suggestion that 51 percent of a street's or block's residents approve the bumps' installation. Practically speaking, this could mean, one, that every other homeowner along the street could object to a bump in front of their house, preventing any installations, and two, that the sale, vacancy, or re-rental of a home on the street could tip the balance against speed bumps and encourage requests for their removal. Of the communities I checked, most require the support of 75 percent of a street's residents or homeowners for the installation of speed humps. Somewhat fewer require 67 percent. None settle for a simple majority.

Other important characteristics of communities' speed hump policies include the rigor of both the petitioning process by which neighborhoods apply for speed humps and the statistical analysis of vehicle speed and volumes that communities use to support or reject requests for the humps. Of the criteria that community boards use to approve speed humps, many require the views of fire, ambulance, and other emergency services. I came upon no communities that cite the numbers of children residing along a block or a street—an issue that Village proponents of the humps often raise--as a criterion for allowing the bumps.

With respect to economic concerns, the police department proposes engaging an independent transportation engineer to make the final determination of where, along a block or a street, to install speed humps, rather than leave the choice to residents or the community governing board. Turning to a contracted service allows the board cover when making unpopular decisions. But such third-party services can be costly and their decisions controversial and seemingly arbitrary. Instead, most communities rely on their public works or transportation departments or other staff, rather than outside contractors.

Further, the location of speed humps that is based upon clear and rigorous criteria could obviate a need for an outside expert's independent judgment.

To hold down other costs of installing speed humps, particularly now in the face of local government budget deficits nationwide, some communities ask that the petitioning homeowners pay a share of the cost of installing and maintaining their speed humps rather than spread these costs equally among all taxpayers. Some have also instituted policies for the removal of speed humps that include charging the cost of removal to those of a street's petitioners who originally requested them. In one sense that seems fair; in another, it might not. In spite of Village resident's wealth—a median annual household income of \$260,000--such policies could provoke disputes between the more affluent streets and the less affluent.

Taking account of Chief Gordon's views, of the established practices of these other communities, and of the backlog of requests for speed humps, I suggest that the board move promptly to develop its own policy. It could assign the preparation of a Village ordinance to the staff or to a committee of residents, perhaps with a board member serving as chair, and invite resident views in public hearings.

It could possibly be that the Village has already gone overboard in installing speed humps. In reviewing the policies of other communities and Montgomery County, the staff or the committee is likely to find that few Village streets meet most other communities' thresholds for speed humps in vehicle speeds and traffic volumes. That said, the Village might conclude that it values traffic safety more highly than other communities and should therefore set more liberal criteria for installing speed humps. The board could also determine that a block's absence of sidewalks and the presence of children should be considered. But it could still set strict standards. In the case of children, the board could require that the staff or a block's speed-hump petitioners show a minimum number of children under five or ten years old residing on the block.

One caveat: This discussion of communities' speed hump policies is largely anecdotal. Speed humps' utility has not been widely researched in a national framework, although with a few exceptions. One, the humps have been shown to delay the delivery of emergency services. And two, they lead to measurable reductions in vehicle speeds.

Speed Humps: Other Communities' Policies

Definitions

Speed Hump: A rounded traffic calming device used to reduce vehicle speed and volume on residential streets. Humps are placed across the road to slow traffic and are often installed in a series of several humps in order to prevent cars from speeding before and after the hump. Generally, speed humps are 12 to 14 feet in length and span the width of the road. The height of humps ranges from 3 to 4 inches. (Wikipedia)

85th Percentile Speed: An index of traffic speeds for a road segment used by transportation professionals for traffic analysis purposes. The 85th percentile speed is the speed at which 85 percent of the motorists are driving at or below.

ADT: Average Daily Traffic. A unit of measure used by transportation professionals for traffic volume analysis. Average daily traffic refers to the traffic in both directions on a particular street within a 24-hour time period.

How to Petition for Speed Humps

Montgomery County, MD

The request must include:

A clear statement of the time of day that the community believes a street has the highest traffic volume and speed.

Selection of a Designated Community Contact Person (DCCP) representing a neighborhood's petitioners for speed humps. The DCCP would be the primary contact for the community.

Boerne, TX

A request can be made by a neighborhood association, a single resident or a group of residents...Each request must include a name, address and phone number of a resident from the requested street who agrees to be the contact person. The contact person will receive all correspondence and be responsible for gathering evidence of support. Each contact person must acknowledge designation by signing the request. Written requests should be submitted to

the Public Works Department ... The request must be for a specific street segment and should include at least the following information:

Eligibility

Montgomery County, MD

Specific criteria, **all** of which must be met for a street to be eligible for speed humps:

Street(s) must have a master plan designation of **Primary Residential** or **Secondary Residential** and shall have direct residential frontage where the average lot size is two acres or less. Arterial roads, rural roads, tertiary streets, or very low density residential streets with houses set far back from the street are normally ineligible for speed humps.

The street's posted speed limit must be either **25 or 30 MPH**.

The prevailing speeds (85th percentile speeds) must be at least 7 miles per hour above the posted or statutory speed limit on **secondary residential streets** or **at least 9 miles per hour** above the posted speed limit on **primary residential streets**.

Traffic volume must be a minimum of 100 vehicles in a one-hour period. Street(s) must have a peak hour traffic volume of **at least 100 vehicles** (equivalent to approximately 1000 vehicles per day).

Street(s) with **Average Daily Traffic volumes exceeding 4,000 vehicles per day** may require a special evaluation and justification for approval, giving consideration to other alternative measures, where appropriate.

The minimum length of the street or street segment under consideration for speed humps shall not be less than 1000 feet.

Speed humps require the concurrence of not less than 80% of the residents (one signature per household), either single family or multifamily, whose livability is directly affected by the traffic conditions along the street(s) or street section(s) being considered for speed hump installation. This typically means direct road frontage of a residence, but can also include side and rear yard frontages depending on the specific circumstance.

Speed humps also require the concurrence of not less than 50% of the residents (one signature per household) on cul-de-sacs or side streets in the neighborhood whose only access to their homes is via the street(s) being

considered for speed humps. (Note. I assume this applies also to dead-end blocks of streets like Montgomery, Grove, Center, and Park. PK)

Rochester, NY

The street must have no parallel local residential streets. If there are parallel local residential streets, the placement of speed humps could merely shift traffic to another street.

The street must have a minimum average daily traffic (ADT) volume of **500; volumes of less than 500 indicate the street is serving as a true local residential street with minor disruption to the neighborhood.**

On streets with ADT volumes between 500 and 3,000, at least 40% of the traffic must be traveling at or greater than 30 MPH; on streets with ADT volumes greater than 3,000, at least 50% of the traffic must be traveling at or greater than 30 MPH.

Consideration of other factors which could further support or detract from the candidate site. These criteria include:

History of accidents clearly related to speeding

Adequate street lighting and drainage.

Sacramento, CA

The segment must be 750 feet in length between traffic controls, four way intersections, and/or curves with less than a 250-foot radius.

Posted speed limit must be 30 mph or less.

A **two-thirds majority** of residents that vote are in favor of the installation of speed humps.

A speed survey shall indicate that the 85th percentile speed is at five or more miles per hour over the speed limit.

Durham, NC

A petition bearing the signatures of at least **75% of the property owners** within the affected block is required.

The street must be residential in nature with: a posted speed limit of 25 mph or less, a **minimum ADT of 500 vehicles per day, and a maximum ADT of 2,500 vehicles per day.**

The 85th percentile speed on the street must exceed the posted speed limit by at least six miles per hour to warrant the installation of speed humps.

Highland Park, IL

75 percent of residents of petitioning street are needed to approve speed hump

To be considered, the **85th percentile speed along the street must exceed the posted speed limit by a minimum of 7 mph.**

The project street must have a minimum of **three reported speed-related accidents within the past three years.**

Traffic volume on the proposed project street must exceed 400 vehicles per day, but be less than 3,000 vehicles per day.

The absence of sidewalks on the project street may be considered as a criterion for installing speed humps.

The street's speed limit is 25 mph or less.

A petition requesting speed humps must be signed by at least 75 percent of all households in the impact area that includes streets to which traffic may be diverted. Only one signature per household is counted. All residents within the impact area shall be presented the opportunity to sign the petition. The City Engineer shall define the impact area.

Farmington, NM

More than **75 percent of the vehicles observed operating on the street where the speed hump may be installed must exceed a speed of 25 m.p.h.**

The average daily **traffic volumes** on the street where the speed hump may be installed **must be greater than 500, but less than 1,500.**

A substantial majority (**70 percent or more**) of the residents on the block where the hump is to be considered must petition for the installation of the hump(s).

A speed hump shall not be installed unless there is 100 percent concurrence by the owners of the properties within 200 feet on either side of the proposed hump location.

Mesa, AZ

The neighborhood liaison and City staff will conduct the review of possible device locations. The neighborhood liaison must then circulate a survey of acceptance to the affected property owners.

The survey must confirm **at least 70% approval from the affected property owners** to install the device. Property owners who do not respond to the survey process or mark "no opinion" are considered opposed to the installation of the device.

All property owners within 50 feet along each side of the device must approve of the installation.

The posted speed limit on the street shall be 30 m.p.h. or less.

The 85th percentile speed on the street shall be at least 8 m.p.h. over the posted speed limit.

Traffic volumes on the street must fall between 500 and 5,000 vehicles per day.

Gwinnett County, GA

Speed tables (similar to humps but flat on top) will only be considered on streets classified as local, residential streets with a posted speed of 25 MPH...

If (a) study indicates that the **85th percentile is at least 11 mph over the posted 25 mph speed limit**, the petition process will proceed at 70% of the petition area. If the 85th percentile is from 30 mph to 35 mph, a waiver maybe requested. It will require 90% of the petition area to sign in favor of the speed humps. If the 85th percentile is under 30 mph speed tables are not advised. The humps were designed to slow traffic to 28 to 30 mph, therefore their installation would serve minimal benefit.

To have speed humps installed in Gwinnett County...all of the property owners in the subdivision or defined service area should be contacted and given an opportunity to sign (the) petition, indicating their "yes" or "no" concerning the installation of speed humps. Unless property is undergoing

change of ownership, a wife's signature will not be acceptable if she is not the legal owner. If both husband and wife are joint legal owners, both signatures are required. A "Mr. and Mrs." signature is not acceptable. All owners must sign individually. This includes owners of undeveloped lots; renting tenants are not an acceptable substitute for the legal homeowner...Each lot counts as only one vote, regardless of the number of owners signing. **At least 70% of the homeowners must vote in favor of the speed humps, before petitions can be presented to the Board of Commissioners.** The completed petition must be signed, notarized and then returned to this office, where it will be checked against tax records and land lot maps to insure that it meets all requirements.

Boerne, TX

In order for a request to qualify for consideration, the street must meet criteria set by the Department. It is the responsibility of the Department to conduct traffic studies to determine if the street segment meets the following criteria:

The street must be curbed and provide access to abutting residential properties

There must be no more than one moving lane of traffic in each direction, and no marked parking spaces will be present

The street must have a posted speed limit of 30 miles per hour or less

The street may not be a major thoroughfare as defined by the Department of Planning

The measured 85th percentile vehicle speeds must exceed the posted speed limit by 5 miles per hour or more in a 24 hour study, or there are two or more speed related accidents within a segment during the last twelve months

The Fire Department must approve the placement.

Rye, NY

An uncontrolled segment length of 600' or greater

A street with a speed limit of 30 mph

The project is approved by at least 75 percent of households on properties adjacent to the proposed street segment.

Those submitting the request must gather **75% approval from households** adjacent to the proposed street segment where the speed humps are to be installed.

Only one signature per address will be accepted. A street segment is a portion of a street between boundaries defined by the requesting petitioners.

A separate petition must be received for each street or street segment.

Mercer Island, WA

The streets' geometrics should be as follows: minimum length of 750 feet, maximum grade of 6%, and an alignment that will allow a minimum sight distance of 200 feet in advance of a speed hump

The **average weekday traffic should be in excess of 1000 vehicles per day**, unless there is no alternative means of controlling speed and volume.

A site must have a legitimate speeding problem verified by observation and radar surveys **with the 85th percentile speed at least 5 mph above the posted speed limit**

Traffic studies indicate that **20% or greater of the traffic is other than local residents.**

Traffic diversion by the speed humps to other residential streets is unacceptable. If diversion to other unsuitable residential streets is anticipated, the adverse impacts shall be addressed and mitigated to a reasonable level.

Installation will not start until all necessary funds are collected, guaranteed or budgeted.

A valid petition received from **at least 60% of local residents** abutting the residential street requesting the installation of speed humps on their street and **agreeing to pay for their share based on the percent of through traffic on the street. The abutting property owners on the street requesting speed humps shall pay the balance of the costs**

Pasadena, CA

Speed humps will be considered on streets where the **traffic volumes in both directions are at least 1,000 vehicles per day and no more than 4,000 vehicles per day.**

A substantial majority (**67%**) of **residents** on logical continuous segments of a local residential street must support the installation of speed humps. Only study area property owners are counted as valid signatures and only one vote is allowed per lot.

Streets eligible for the installation of speed humps shall have a speed limit of 25 MPH and **shall have an 85% speed of greater than 33 MPH.**

Hayward, CA

A petition supplied by the Transportation/Development Section shall be submitted containing **the signatures of 2/3 of the property owners along a street or street segment, and each of the property owners immediately adjacent to each proposed hump location.**

The street must be either a residential street or a local street.

The speed limit on the street does not exceed 25 miles per hour.

By means of a speed radar survey, it is found that **15% of the traffic travels at 32 mph or greater.**

The street **must be a through street** (no cul-de-sacs or alleys), have a paved width of 40 feet or less and be bounded by standard curb and gutter.

The street must contain no more than one lane of traffic in each direction.

The average daily traffic volume for both directions must range from 500 to 4,000 vehicles per day on average weekdays.

The street cannot be in an industrial area, along established truck routes, public transit routes, or established/preferred emergency vehicle routes. Both the Hayward Fire Department and Hayward Police Department must concur

The street grade is less than 5% and the centerline radius is greater than 300 feet.

The street must be a through street (no cul-de-sacs) with a minimum length of 750 feet which is uninterrupted by other intersections.

Marietta, GA

Traffic data must show the 85th percentile traffic speed is 10-mph or more over the posted speed limit, and the ADT is between 300 and 3000 vehicles.

Titusville, FL

The street must be a minimum of 1,000 feet long.

The road must have no more than two (2) lanes of traffic.

The 85th percentile speed must be at least 35 mph with a minimum two way traffic volume of 1,000 vehicles per day, or if the 85th percentile speed exceeds 38 mph, the two way traffic volume is 70% of the required 1,000 vehicles per day (700 vehicles

If the warrant criteria are met, the City will install a speed hump at no cost to the residents. If the warrant criteria are not met, **the petitioning residents may appeal to the Titusville City Council providing that they agree to pay in advance one half of the cost (or \$750) for the installation.** The City will pay the additional \$750, construct the speed hump, and install the appropriate pavement markings and signage in a reasonable period of time.

City provides petition forms for residents to fill out.

Lakewood, CO

A petition shall be circulated and **signed by a minimum of 95% of the households** in the block where the speed hump is requested. **At least 80% of those signing shall be in favor of the hump in order for it to be eligible** for installation. Each household shall be entitled to express a single opinion regardless of the number of persons residing at that household.

Speed humps will be installed only on local streets with **traffic volumes between 300 vehicles per day and 3,000 vehicles per day.**

Speed humps will be installed only on local streets where the current posted speed limit is 30 miles per hour or less and the average speed of traffic traveling the roadway is in excess of the posted speed limit as determined by a City traffic engineering investigation.

Pleasant Hill, CA

Sites for speed humps must be

2 lanes wide (40 feet maximum)

Not a designated truck, bus or emergency route

Include curb and gutter

Speed limit is 25 mph

Maximum grade is 5%

Minimum length of 750 feet

Traffic volume is between 500 and 2,000 vehicles per day

Sandusky, Ohio

To qualify for speed humps, the petitioning street or block must meet all these criteria:

Receipt and verification of petitions from a minimum of **60% of all residents** of the street in question, as defined below; and ,

At least 55 percent of the ADT (average daily traffic) exceeds the posted speed limit.

The street in question must have a speed limit of 25 mph.

The street in question must be classified as a local or neighborhood collector.**

The street must 750 feet or more in uninterrupted length (excluding intersections).

The street already has posted speed limit signs.

** *Local Access Streets* – ADT minimum of 1000 vehicles per day.

Speed Hump Placement

Durham, NC

Speed humps may be **placed a maximum of 750 feet apart (275 foot intervals is ideal)** and a minimum of 200 feet from intersections where

approaches of the street in question are controlled by traffic signals or stop signs.

On streets where the intersection approaches are uncontrolled, humps may be placed a minimum of 100 feet from the intersection.

Speed humps should be installed so as to avoid several street features. These include drainage features, utilities, driveways, severe horizontal or vertical curves and traffic control devices.

All humps will be placed in close proximity to property lines whenever possible.

Humps shall not be placed on streets less than 750 feet in length.

Hayward, CA

Humps must be at least 175 feet apart.

Humps should be placed at least 250 feet away from nearest intersection, stop sign, or traffic signal.

Speed humps should not be installed at locations, which will result in displacement of traffic to parallel streets.

Speed humps shall not be placed over manholes, drainage structures, water meters, or other utility access points and shall only be placed at locations which do not create adverse impact on drainage patterns.

If possible, speed humps should be placed near existing street lighting.

Speed humps shall be installed no closer than 10 feet to the nearest driveway and 25 feet to the nearest fire hydrant.

A series of two or more speed humps are usually more effective than single hump installations. Any one series of humps should generally not be greater than one-half

Spacing should allow at least two speed humps on each block.

Speed humps shall be located so that they are clearly visible for at least 200 feet from each approach.

Speed humps should be positioned on property lines. **Placement in front of residences should be avoided**, especially those with a direct window view to the street.

Gwinnett County, GA

GRADE - Speed humps will not be installed on street sections with grades greater than 8%.

SIGHT DISTANCE- Speed Hump should be placed in locations where sight distance is not an issue. Curves are to be avoided.

NUMBER OF HUMPS IN A SERIES - Speed humps are not to be used to slow traffic at a given "point," but rather to reinforce a safe, consistent speed. For this reason, a single hump is not recommended. Usually, a series of humps should not exceed three-quarters of a mile.

SPACING - Research indicates that spacing humps between 350 and 500 feet apart is most effective at lowering the 85th percentile speed to the targeted range.

LOCATION- The first hump in a series must be located in a position where it cannot be approached at high speed from either direction. To achieve this objective, the first hump in a series is typically installed within 100 and 200 feet of a small-radius curve or stop sign. Care should be taken so that humps are not proposed in areas, which would conflict.

Funding

Gwinnett County, GA

Annualized charges for initial installation, maintenance and repair of speed humps are added to the property tax bills at the end of the year. Each platted lot, whether developed or not, will be subject to the assessed charges. The rate for participation in the speed hump program will be \$12.00 per year per property in the "defined service area."

Sacramento, CA

A street which qualifies for (a speed hump) may be funded by an individual or a group of individuals. The individual or group of individuals must enter into a memorandum of understanding (MOU) with the City of Sacramento, wherein they agree to pay for all costs associated with the installation of speed humps on their street (construction,

inspection, administration, etc)...Private payment for speed humps does not relieve a location from the requirement of a two-thirds majority of residents favoring the installation of speed humps, or from any other criterion set forth in these guidelines.

Lakewood, CO

One-half the cost is paid by the City of Lakewood and one-half by households in the defined block. A fixed cost shall be established yearly by the City, which shall include the cost of labor and materials to install the hump and related signs and pavement markings.

The citizen requesting the speed hump shall be responsible for collecting the required 50% matching funds and submitting them to the City. The funds contributed by each household, if any, shall be on a voluntary basis and no representation shall be made by the citizen(s) soliciting funds that a contribution is mandatory.

Mesa, AZ

If all warranting criteria are satisfied, the City will be responsible for payment of all costs associated with installing the devices. These include the costs of material, construction, signing, striping, maintenance and removal of the devices (if necessary).

If the neighborhood wishes to pursue the installation of the devices on a street with traffic volumes below 500 vehicles per day, but satisfying all of the other warranting criteria, the devices could be installed. In this case, the neighborhood would be responsible for \$500 of the material and construction costs of each device installed on the street.

The **neighborhood will be responsible for all data collection costs** required to determine if the street under consideration meets the warranting criteria. Traffic volume and speed data will be collected by one of the City of Mesa's traffic counting contractors. Typically, sufficient data is collected using road tubes in one location for 48 consecutive hours. Two count locations are generally necessary for street segments over one-half mile in length or if the character of the street or adjacent land use varies considerably from one end of the street segment to the other.

The neighborhood shall pay for the data collection prior to the traffic speed and volume counts being taken on the street under consideration. This payment is non-refundable once the traffic counts have been taken.

Boerne, TX

An annual budget will be established for construction of approved projects. Projects will be scheduled for construction by priority ranking as funding permits within the established budget. **An eligible project may be expedited if the applicants choose to pay for 100% of the estimated cost of the installation.** Expedited projects will be constructed no later than the next fiscal year following deposit of funding.

Approved projects that do not receive funding in the current year, will be automatically considered for 2 additional years. All projects will be re-prioritized by ranking on a biannual basis.

Speed Hump Removal

Lakewood, CO

If the removal of the hump is approved by households on the street block that was originally defined for installation, the households must bear the entire cost of the removal, which shall be 100% of the cost determined for installation of for the current year. If the street is scheduled to be resurfaced the speed hump will be removed at City cost.

Marietta, GA

After speed humps have been installed for a minimum of five years, at least 75 percent of the speed hump study area property owners must sign the petition requesting removal of speed humps before the request can be brought before the Marietta City Council. Speed humps will not be removed unless approved by the City Council. The City of Marietta reserves the right to remove speed humps for any reason.

Gwinnett County, GA

Removal of speed humps can proceed if the County is presented a petition requesting that speed humps be removed. **At least 70% of the property owners must vote in favor of removing the speed humps.** Petition must be signed by property owners only. In case of multiple owners, each owner must sign...Each lot counts as only one vote, regardless of the number of owners signing. Such a petition for removal will only be

considered after speed humps have been in place for a period of at least one year.

Highland Park, IL

Petitioning for removal is the same as for installation. Petitioners for removal, however, bear the cost of removal.

Mercer Island, WA

No removal of the speed humps within two years of their installation

Removal costs to be paid 100% by petitioners

At least one of the following criteria shall be met prior to removal

- a. **Petition by at least 60% of the local residents requesting the removal of the speed humps**
- b. Traffic study to indicate that the cause for the initial installation no longer exists and is unlikely to return.

